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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,991	11/16/2001	Daniel C. Baker	PHA 51232A (VLSI.273DIV1)	4299

7590 06/03/2003

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EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 06/03/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,991

Applicant(s)

BAKER, DANIEL C.

Examiner

George R. Koch III

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramanian (US Patent 6,248,175 B1) and Pollak et al (US 5,270,797)

As to claims 1 and 2, Subramanian discloses means for illuminating the substrate (item 68), in the form of a light source, two state means for adjusting the illuminating by turning item 68 on and off (item 66), and means for controlling the dispensing of material as a function of the adjusted illumination (item 74 - See Figure 3 for entire system) in the form of a controller coupled to the light source. Subramanian does not disclose using a plurality of illumination intensities, or controllers for adjusting the illumination intensities.

Pollak discloses using a plurality of illumination intensities (see item 18), and controllers for adjusting the illumination intensities (items 21). Pollak discloses that such structures allow for achievement of a "normalization" of the intensity value which improves detection functioning. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized multiple intensities and control structures associated therewith in order to improve detection functioning.

5. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramanian and Pollak as applied to claims 1 and 2 above, and further in view of Sanada (US Patent 5,985,357).

Subramanian uses a fiber optic line, but does not disclose if the sensor (item 72) at the end of the fiber optic line is a photodiode. Subramanian merely describes the sensor functioning as being any known spectrometry or interferometry system.

Sanada discloses a known interferometry system utilizing a photodiode (6c, see column 6, lines 39-42) for illuminating the substrate much as in Subramanian. Sanada discloses that the photodiode system in conjunction with a photoresist deposition method (see column 6, lines 42-61). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a photodiode as the sensor in Subramanian in order to provide functioning during the monitoring of a photoresist deposition method.

As to claims 3 and 5, the use of non-reflective walls for the chamber and other elements is well known and conventional in photoresist applications. Photoresist by definition reacts to light, usually by hardening, and non-reflective coatings on the chamber would reduce the amount of light impinging the photoresist during the photoresist application step, which occurs prior to the photoresist hardening step. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to ensure that only the minimum amount of light needed for sensory operations strikes the photoresist, to reduce hardening by making the interior of the chamber nonreflective.

As to claim 7, Subramanian and Pollak as applied to claims 1 and 2 above make obvious the combination of the light source, the dispenser and controller as

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claimed. Subramanian and Pollak, however, do not disclose a first detect that can detect initial contact of the material with the substrate.

Sanada discloses a sensor (item 40) which is capable of monitoring the initial contact of the dispensed liquid. One in the art would appreciate that such a sensor would allow overall visual inspection of the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a sensor in order to improve dispensing control.

As to claim 8, Subramanian and Pollak both disclose intensity sensors (item 70 for Subramanian, item 56 for Pollak).

Response to Arguments

6. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory


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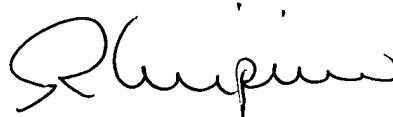
period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (703) 305-3435 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-800-877-8339 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


George R. Koch III
June 2, 2003


RICHARD CRISPINO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700